

Andersen (1917) separated *pulchellus* (Bellary population) from *speoris* only on average measurements: skull length 18-19.8 mm (18.8) vs. 19-20.3 mm (19.7) and forearm 45.8-51 mm (49.5) vs. 49.8-54 mm (52). From a study of the material of the species from the range of the two 'subspecies', I find that there is no difference in their external or cranial measurements (Table), as mentioned by Anderson (1918). I would therefore, treat *H. speoris pulchellus* Andersen as a synonym of *H. speoris speoris* (Schneider).

The species has hitherto been known to range from Peninsular India, Sri Lanka east to Java, Sumatra and Timor. Brosset (1962) mentioned its absence in Gujarat but one specimen examined by me from Baroda (Gujarat) belongs to this species.

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2. A NOTE ON ECOLOGY OF THE GOLDEN LANGUR (*PRESBYTIS GEEI* KHAJURIA)

INTRODUCTION

A survey of Manas Sanctuary was undertaken to investigate the distribution of the fauna and to ascertain the present position of the Golden Langur (*Presbytis geei* Khajuria) in the Sanctuary area. The period of survey was from 8th to 18th January 1974. The area within and around the sanctuary were covered by Jeep, on foot, by boat and on elephant back. This report also includes findings of 4 surveys in Garo Hills area pertaining to *Presbytis geei*.

DISTRIBUTION

Gee (1961) gave the distribution of the species as the areas east of River Sankosh and west of River Manas in north west Assam. Further, he presumed (1961, 1964) from reports of sportsman and animal dealers that Golden Langur is present in small numbers in Garo Hill district of Meghalaya and foot hill areas of Khasi Hills although he himself could not spot a single one in these areas. Initiated by a report to the Bombay Natural History Society and a request from the Society to undertake a survey in Garo Hill a serious search was started by Eastern Regional Station, Zoological Survey of India and in February 1970 a party headed by Dr. G. M. Yazdani (10 Feb.-28 Feb. 1971) surveyed certain areas of Garo Hills (Tikrikillah, Tura, Baghmara, Rongdong, Dudhnai) but could not spot a single *P. geei*. A second survey was undertaken in 1971, led by Dr. R. S. Pillai (7th April-16 April 1971) in those areas (Dudhnai, Damra, Darugiri) where Golden Langur was reported but the result was negative. Later in April 1973 and November 1973 two more extensive surveys were made, headed by one of the authors (S. Biswas) in Garo Hill district including areas e.g., Dhudhnai, Dainadubi, Bangshi, Wageasi, Rongjeng, Songsok, Rongrengiri (4 April-24 April 1973) and Bajengdoba, Anogiri, Rongram, Songsok and Damra (3 Nov.-24 Nov. 1973) but no Golden Langur could be observed. It may further be added that the junior author (S. Biswas) had also surveyed Goalpara district of Assam adjoining Garo Hills but failed to notice any Golden Langur in the area.

The present survey confirms Gee's (op. cit.) observation that Golden Langurs are not found on east bank of Manas, as a survey in the areas extending from Mathonguri *via* Falaguri to Kahitama did not reveal any Golden Langur. It also supports earlier observation of its occurrence in west bank of Manas in Bhutan Forest areas as on 4 different dates troops of Golden Langur were observed only in a part (10 sq km) of this evergreen forest.

STUDY AREA

The present survey included an area of 50 km on each side of river Manas from Mathonguri to Kahit and 10 km on the west bank of Manas in the forested hills of Bhutan. The Golden Langur, as already stated, was seen only in the Bhutan side; this area has steep hills covered by evergreen forest with a gentle slope near Manas river. The forest in study area in the foothill has tall trees such as *Lagerstroemia parviflora* Roxb. [Assamese: Sida], *Salmalia malabarica* DC. (Schat & Eudl.) [Assamese: Simul], *Dalbergia sissoo* Roxb. [Assamese: Sisoo],

Amoora wallichii King [Assamese: Amaril], *Trewia nudiflora* Linn. [Assamese: Bhelkor], *Ficus* and *Terminalia* spp. besides some shrubby undergrowth.

In the area two troops of Golden Langurs observed, no solitary male was seen. The home range of the troops during the survey appeared to be 3×2 km each with an overlapping region.

TROOP ORGANISATION

Both troops had only one adult male but more than one adult female and adolescent animals of various age groups. In troop 1 only one female with infant was seen whereas in troop No. 2, two females with infants were observed. Troop 1 consisted of 9 members including one adult male, one adult female, 2 subadults and 1 infant and troop 2 consisted of 6 members 1 adult male, 1 subadult male, 2 adult females, 2 infants.

FEEDING BEHAVIOUR

Gee (1961) listed nine trees on which the Golden Langurs were seen feeding (Buds, leaves, flowers and fruits); in the present study the langurs were observed feeding on flowers of *Salmalia malabarica*, (and this appears to be the most preferred food), and fruits of *Amoora wallichii* and *Trewia nudiflora* the last two food plants were not included in Gee's (op. cit.) list. The langurs pick up flowers of *Salmalia* in quick succession and throw the petals down after eating the calyx; while eating fruits of *Amoora* and *Trewia* they were never seen to eat the whole and often after eating a part throw the rest to the ground. Tall branches of trees were always selected for eating and movement from tree to trees or branches was always swift and together. The feeding time varied from 8.30-9.30 a.m., 11.30 a.m. to 1 p.m., 1.30-2.00 p.m. and it appeared that feeding usually coincided with bright sunshine as on the second and third day mentioned earlier, the sky was overcast till noon.

MOVEMENT

Golden langurs appear to prefer tall trees for movement and during the present survey they were never seen below 8 m. They never seemed to be bothered by our observation and even looked down at us from tall trees. They are facile in their movement from one tree to other or from a higher to lower branch, always seen to leap straight and hardly missing the next target. When disturbed, the troop moves very

fast from one tree to the next and continues moving till they reach a suitable tree with foliage cover.

RESTING, AGRESSION, VOCAL COMMUNICATION

The resting langurs usually groom each other. The infant sticks close to the breast of mother and the adult male usually sits on a higher branch looking around.

Only on one day (15-1-1974) was an adult male seen chasing a subadult male on two different occasions and hitting him, when the subadult and the females, screeched. The loud joyous sounding whoops so often made by the common langur [*Presbytis entellus* (Dufresne)], was never heard.

Mating activity was not observed during the present study.

RELATIONSHIP WITH OTHER ANIMALS

The Common langur [*P. entellus* (Dufresne)] and the Capped langur (*P. pileatus* Blyth) present otherwise in Manas Sanctuary area were never seen in association with the Golden Langur.

The only animal which was observed to share food from the same tree with the golden langur was the Malayan giant squirrel *Ratufa bicolor* Sparrmann, and the langur did not seem to object to the presence of these animals.

COLOUR

The colour of different members of the troops vary considerably. The young as also the females appear to be silvery white to light golden whereas the adult male always showed rich golden colour in most part of its fur. Gee (op. cit.) stated that cream or white colour was seen in warm weather and the rich golden to chestnut colour was restricted to colder months but our observations reveal colour differentiation in age and sex groups.

DISCUSSION

During the present study it became obvious that the west bank of Manas in Bhutan forest region has become much less dense than during Gee's earlier observation period and consequently when the golden

langurs come to the fringe areas of forest near the elephant track III, they can be more easily observed. Due to complete protection these animals appear to have become accustomed to human beings.

The infants seen with the troops seemed to be 1-2 months old and as such the young must have been born during November. As reported by the Divisional Forest Officer in charge of Gauhati Zoo, the langur in captivity does not seem to have any particular mating period but the two babies born in captivity were during July and August.

The existence of Golden Langurs in Garo hill district is still to be proved. Gee's (op. cit.) personal attempt as well as four extensive surveys made from this station did not yield a single evidence so far. The definite area of distribution remains between Sankosh and Manas, in a strip of country along the Bhutan border.

The migration of these langurs to the high hills during summer has yet to be investigated but the Divisional Forest Officer of Bhutan forests informed the senior author that he has seen Golden Langurs upto 1600 m on Bhutan Hills on west bank of Manas, during summer months.

Besides the two troops seen during the present study, it is reported that two other troops exist on the Bhutan side of Manas within an area of 15-20 sq km and future studies may well provide data from 4 troops in the study area. The elephant track in the Bhutan forest offers excellent opportunity to track these animals.

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